# Operational Risk Management (ORM)

*Ogden Air Logistics Center*

## Level 3 Training for Employees

## Training Provided by Your Supervisor

1. Identify the Hazards
2. Assess the Risks
3. Analyze Risk Control Measures
4. Make Control Decisions
5. Implement Risk Controls
6. Supervise and Review

**Mr. Jimmy Campbell**

**OO-ALC ORM Project Manager**

# USAF ORM VISION



**Create an Air Force in which every leader, airman, and employee is trained and motivated to personally manage risk in all they do, on and off duty, with the objective of continuously widening the gap between what the Air Force can do in battle and what its adversaries can do, ensuring decisive victory in any future conflict at the least possible cost.**

**BOTTOM LINE: INTEGRATE ORM INTO EVERYTHING WE DO**

# USAF Operational Risk Management



*"I'm a strong advocate of the Air Force's Operational Risk Management Program, and I expect every Air Force member and unit commander to support and build on its fundamentals."*

**General Ryan, CSAF**

# LEVEL-3 OVER REVIEW

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- **DEFINITIONS**
- **THE USAF ORM CONCEPT**
- **WHAT ORM IS & IS NOT**
- **4 KEY ORM PRINCIPLES**
- **6 STEP PROCESS**

# DEFINITIONS



**"OPERATION"**

**MISSION, PROJECT, ACTIVITY**

**"COST"**

**SCHEDULE, PERSONNEL, $, COMFORT**

**"HAZARD"**

**NEGATIVE IMPACT ON THE "OPERATION"**

# THE USAF ORM CONCEPT



- **ALL ARE RESPONSIBLE FOR USING ORM.**
- **RISK IS INHERENT IN ALL OPERATIONS.**
- **RISK CAN BE CONTROLLED.**

# WHAT ORM IS &IS NOT



- **ORM IS NOT AN EXCUSE FOR VIOLATING TECH DATA OR PUBLIC LAW**
- **ORM IS A TOOL FOR IDENTIFYING AND SUPPORTING CHANGES IN TECH DATA**

# 4 KEY ORM PRINCIPLES



1. **Accept no unnecessary risks.**
2. **Make risk decisions at the appropriate level.**
3. **Accept risks when benefits outweigh costs.**
4. **Integrate ORM into operations and planning at**

**all levels.**

# 4 KEY ORM PRINCIPLES



## *1. Accept No Unnecessary Risks*

**BUT… NOBODY TAKES "UNNECESSARY" RISKS?**

***If all the hazards that could have been detected have not been detected then unnecessary risks are being accepted.***

# 4 KEY ORM PRINCIPLES



## *2. Make Risk Decisions at the Appropriate Level*

### Factors to consider.

- **Who will answer in the event of a mishap?**
- **Who is the senior person at the scene?**
- **Who possesses best insight into the full benefits and costs of a risk?**
- **Who has the resources to mitigate the risk?**
- **What level makes the most operational sense?**
- **What level makes these types of decisions in other activities?**
- **Who will have to make this decision in combat operations?**

# 4 KEY ORM PRINCIPLES



## *3. Accept Risks When Benefits Outweigh Costs.*

**BENEFITS**
**MUST**
**OUTWEIGH**
**COST**

# 4 KEY ORM PRINCIPLES

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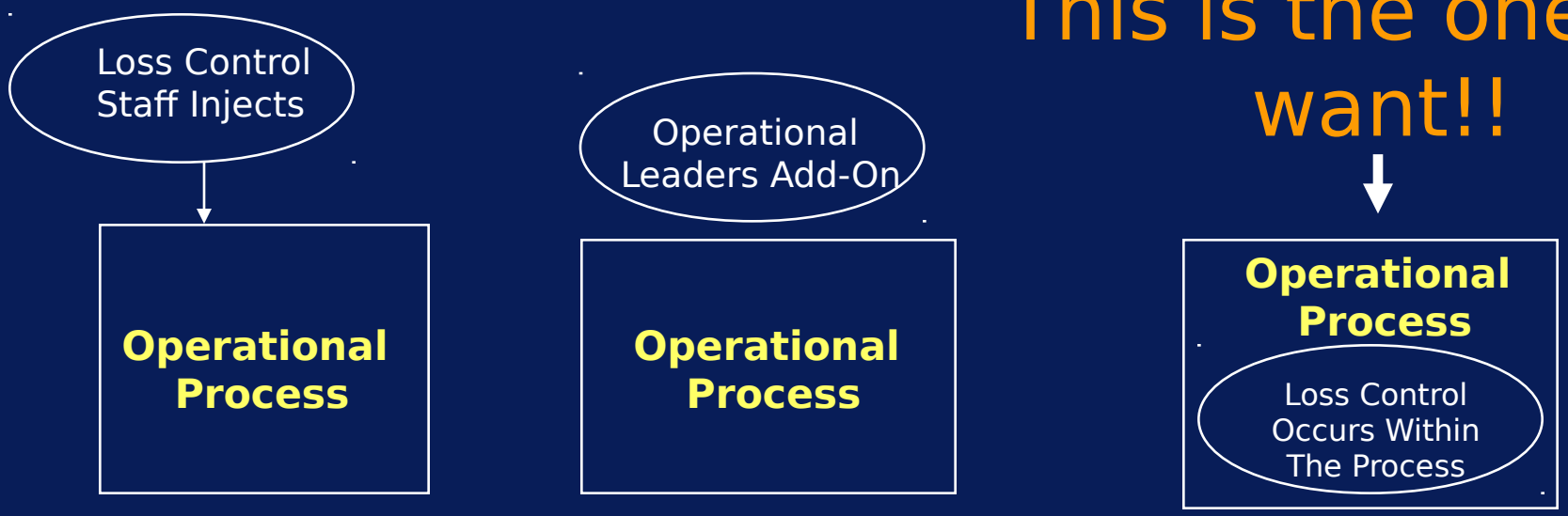
## *4. Integrate ORM Into Operations and Planning At All Levels.*



# THE ORM 6-STEP PROCESS

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- 1 ID THREAT
- 2 RACK & STACK
- 3. DEVELOP FIXES
- 4. ASSIGN RESPONSIBILITY
- 5. IMPLEMENT FIXES
- 6. FOLLOW-UP

1. Identify the Hazards
2. Assess the Risks
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# STEP 1 - ID THE THREAT

1. Identify the Hazards
2. Assess the Risks
3. Analyze Risk Control Measures
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6. Supervise and Review

# Step 1 Identify The Hazard



**Identify the hazards to the mission by:**

**Analyzing the Mission**

**Listing the Hazards**

**Consider Potential Causes**

# Step 1 Identify The Hazard

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## Analyze the Mission

- Review the mission statement.
- Focus on key capabilities and the associated equipment.
- Look at past patterns of mishaps to detect high impact issues.
- Ask operational personnel what is important.
- Use the timeline.

# Step 1 Identify The Hazard



## List Hazards

## Sources of Information

- Experts and references
- Inspections, Mishap Reports
- Employees
- Supervisors
- Hazard ID Tools (Reviewed later)

# Step 1 Identify The Hazard



## Consider Causes
## 5M model

**Man root causes - Doesn't know - Training, Doesn't care - Motivation, Can't do - Selection.**
**Machine - Poor design, faulty maintenance, procedures.**
**Media - Weak facility design, lack of provisions for natural phenomena.**
**Management - Inadequate procedures, standards and controls.**
**Mission - Poorly developed, weak understanding, incompatibilities.**

# Step 2 - RACK & STACK

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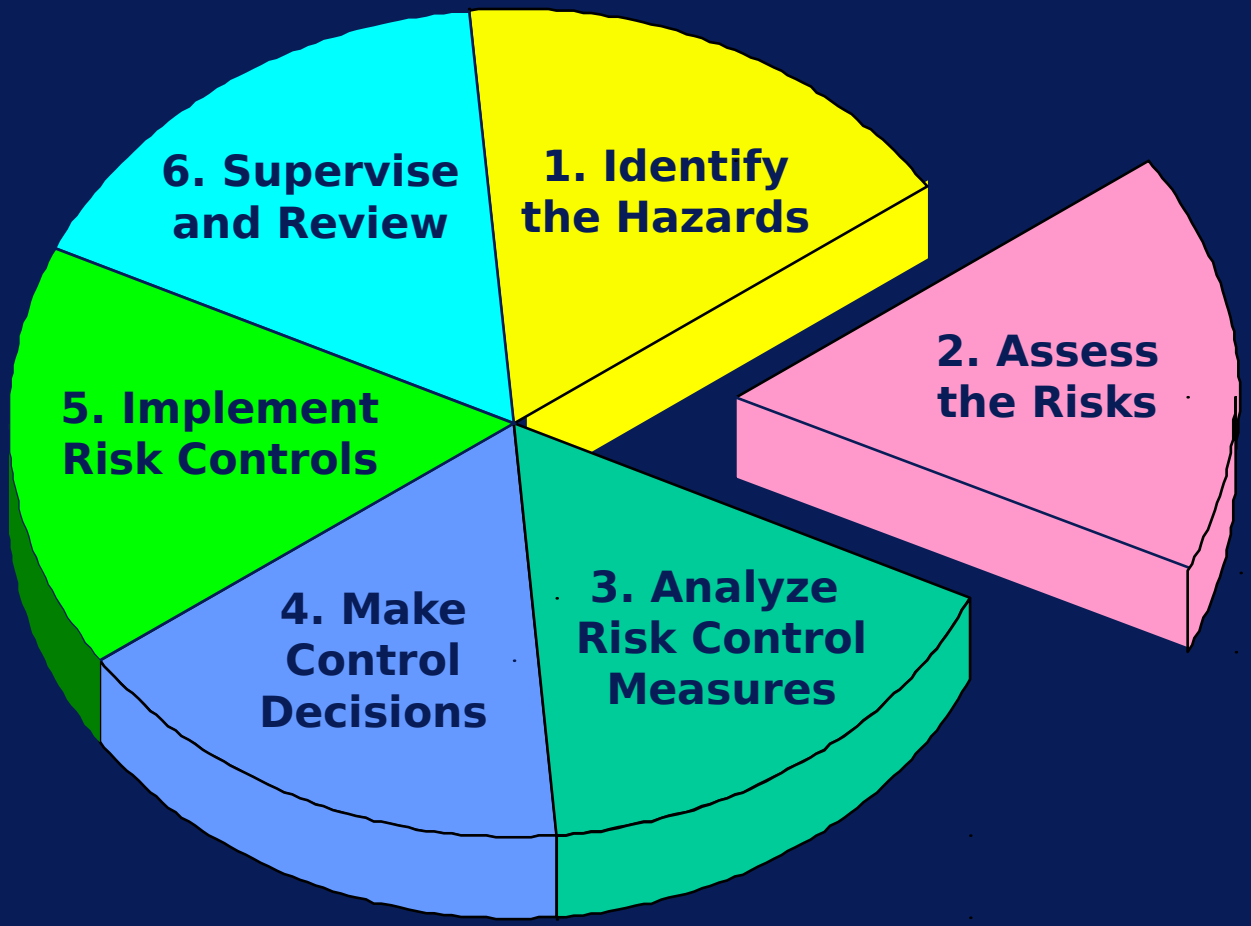
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# Step 2 - Rack & Stack



## RACK & STACK

**Prioritize all "hazards or threats" to the mission so you can focus first on those most damaging to the mission.**

**Consider probability and severity to determine impact on priority.**

# Step 2 - Rack & Stack



## Severity

- What impact on mission?
- What impact on people?
- What impact on things (materiel, facilities, environment)?

# Step 2 - Rack & Stack



## Probably

- **Use experience data when possible (history).**
- **Involve employee knowledge and experience.**
- **Realize that probability involves some uncertainty.**

# Step 2 - Rack & Stack

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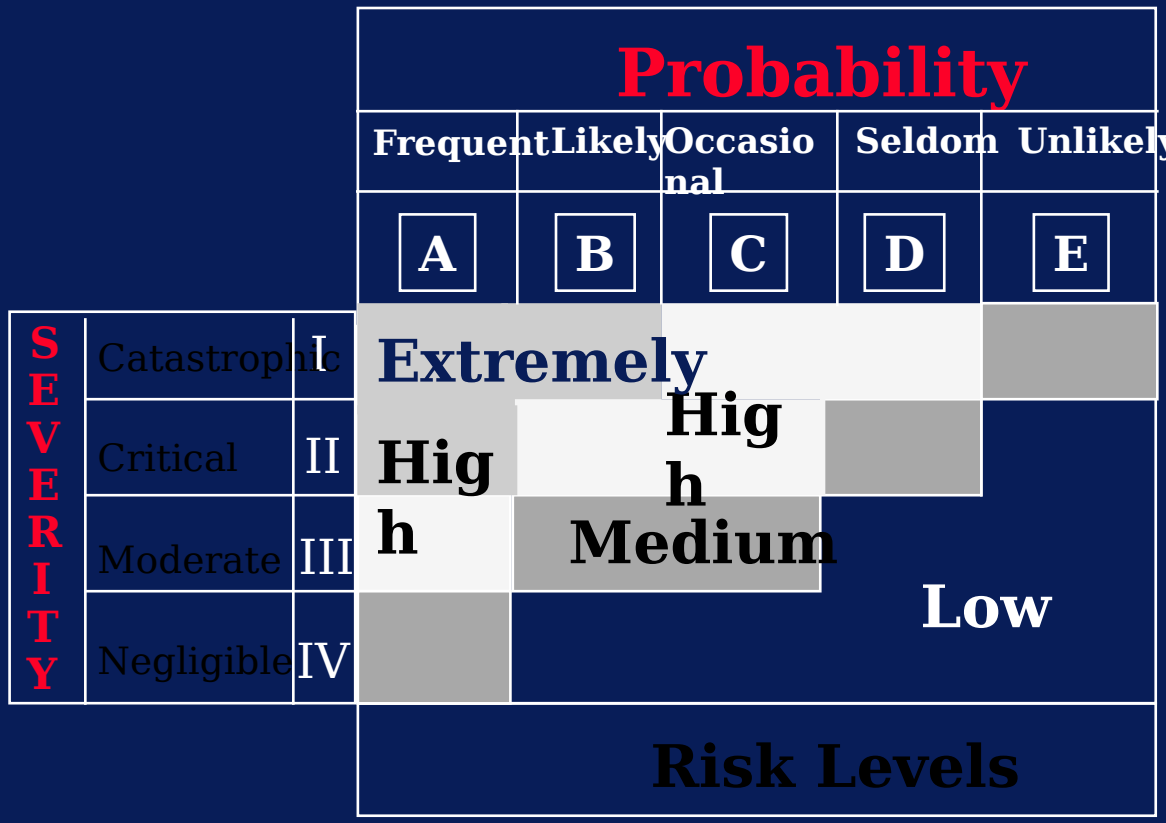
## Risk Assessment Matrix



# Step 2 - Rack & Stack

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## *"ENHANCED"* RISK ASSESSMENT MATRIX

- Assignment of Numbers to Rank Risks More Quantitatively

| SEVERITY | | Probability | | | | |
|---|---|---|---|---|---|---|
| | | Frequent | Likely | Occasional | Seldom | Unlikely |
| | | A | B | C | D | E |
| Catastrophic | I | 1 | 2 | 6 | 8 | 12 |
| Critical | II | 3 | 4 | 7 | | |
| Moderate | III | 11 | 15 | 5 | 9 | 10 |
| Negligible | IV | 14 | 16 | 13 | 17 | 18 |
| | V | 19 | 20 | | | |
| | | Risk Levels | | | | |

# Step 2 - Rack & Stack



## Complete Assessment

## BUILD A PRIORITY LIST

## TO TURN HAZARDS INTO ACTION TARGETS

# STEP 3 - DEVELOP FIXES

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1. Identify the Hazards
2. Assess the Risks
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# Step 3 - Develop Fixes



## DEVELOP FIXES

**Develop fixes based on a worst-first.**

**Fixes must be cost effective and mission supportive.**

**Fixes must not conflict with other mission activities.**

# Step 3 - Develop Fixes



## Develop Fixes

**Consider the "Standard Order of Precedence" for developing fixes.**

- **Plan or Design for Minimum Risk**
- **Incorporate Safety Devices**
- **Provide Warning Devices**
- **Develop Procedures & Training**

# Step 3 - Develop Fixes



## Develop Fixes

### Consider

- Select most mission supportive fixes.
- Be aware some fixes are incompatible.
- Be aware some fixes reinforce one another.
- Evaluate full costs versus full benefits.
- When mission supportive - choose redundant fixes.
- Pinpoint fixes when possible

# Step 4 - ASSIGN RESPONSIBILITY

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1. Identify the Hazards
2. Assess the Risks
3. Analyze Risk Control Measures
4. Make Control Decisions
5. Implement Risk Controls
6. Supervise and Review

# Step-4 Assign Responsibility



## Step 4 is about LEADERSHIP

**The right person, at the right time, with the right support based upon:**

**Who has the “big picture” and the ability to control the costs and benefits.**

# Step-4 Assign Responsibility



## Consider

- What are the operational realities?
- Who will take the heat if it goes bad?
- Who has the best grasp of the risk and the opportunity issues?
- Who would make the decision in combat?
- Who can commit the risk control resources?

# Step 5 - IMPLEMENT FIXES

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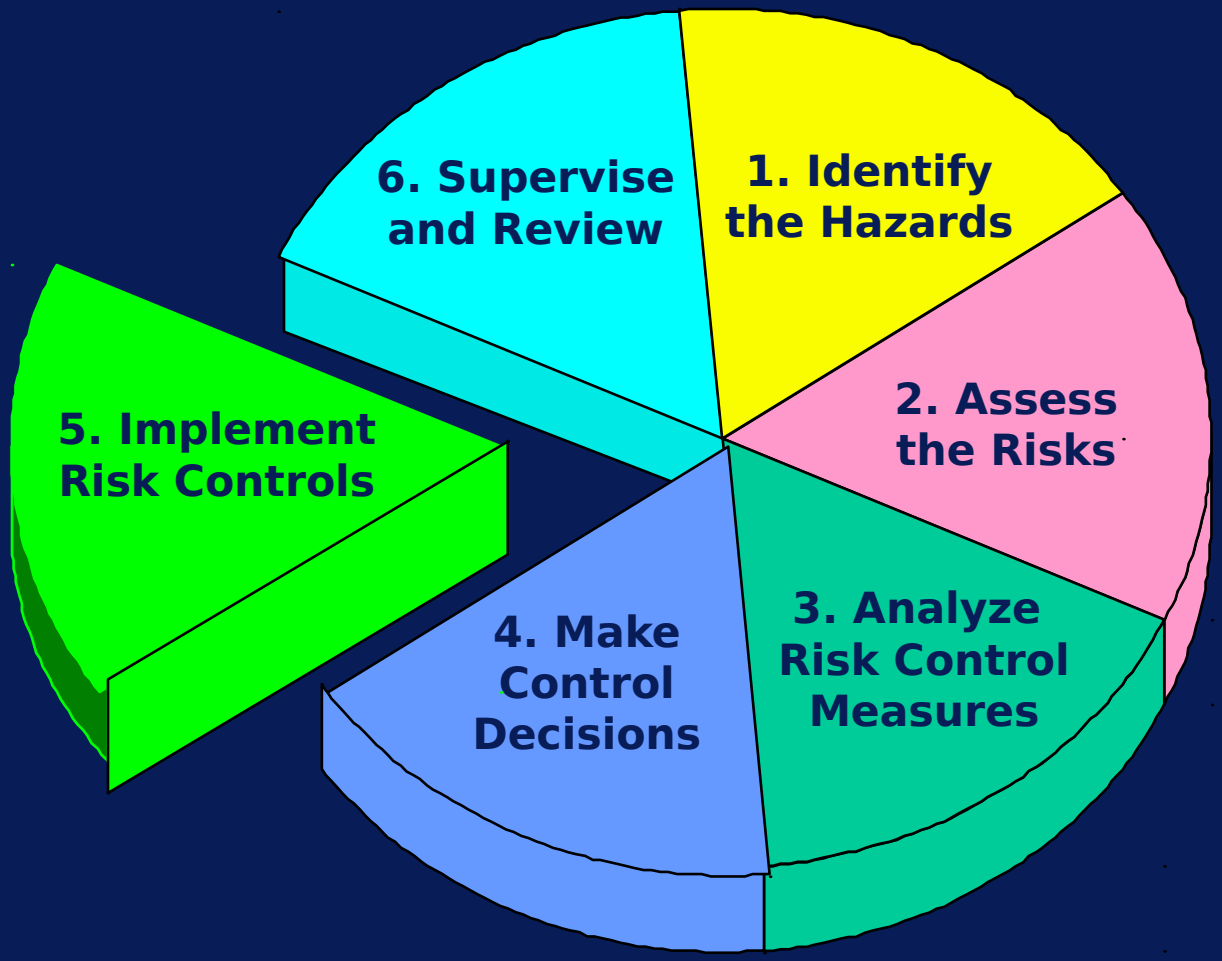
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# Step 5 - Implement Fixes



**Step 5 is about LEADERSHIP**

**Make implementation clear**

**Establish Accountability**

**Provide support**

# Step 5 - Implement Fixes



## MAKE IMPLEMENTATION CLEAR

### Factors to consider:

- Fully involve operational personnel.
- Frame the control within the organizational culture.
- Provide specific task-oriented guidance.
- Test it on a small sample of the target audience.
- Coordinate as necessary.

# Step 5 - Implement Fixes



## ESTABLISH ACCOUNTABILITY

### Factors to consider:

- Use the power of command and leadership.
- Create meaningful, positive incentives.
- Assure accountability is integrated through the chain of command.

# Step 5 - Implement Fixes



## PROVIDE SUPPORT
## Factors to consider:

- **Provide complete packages (clear, policy, job aids, decision tools, models, databases, training, motivation).**
- **Provide sustained feedback on results.**

# STEP 6 - FOLLOW-UP

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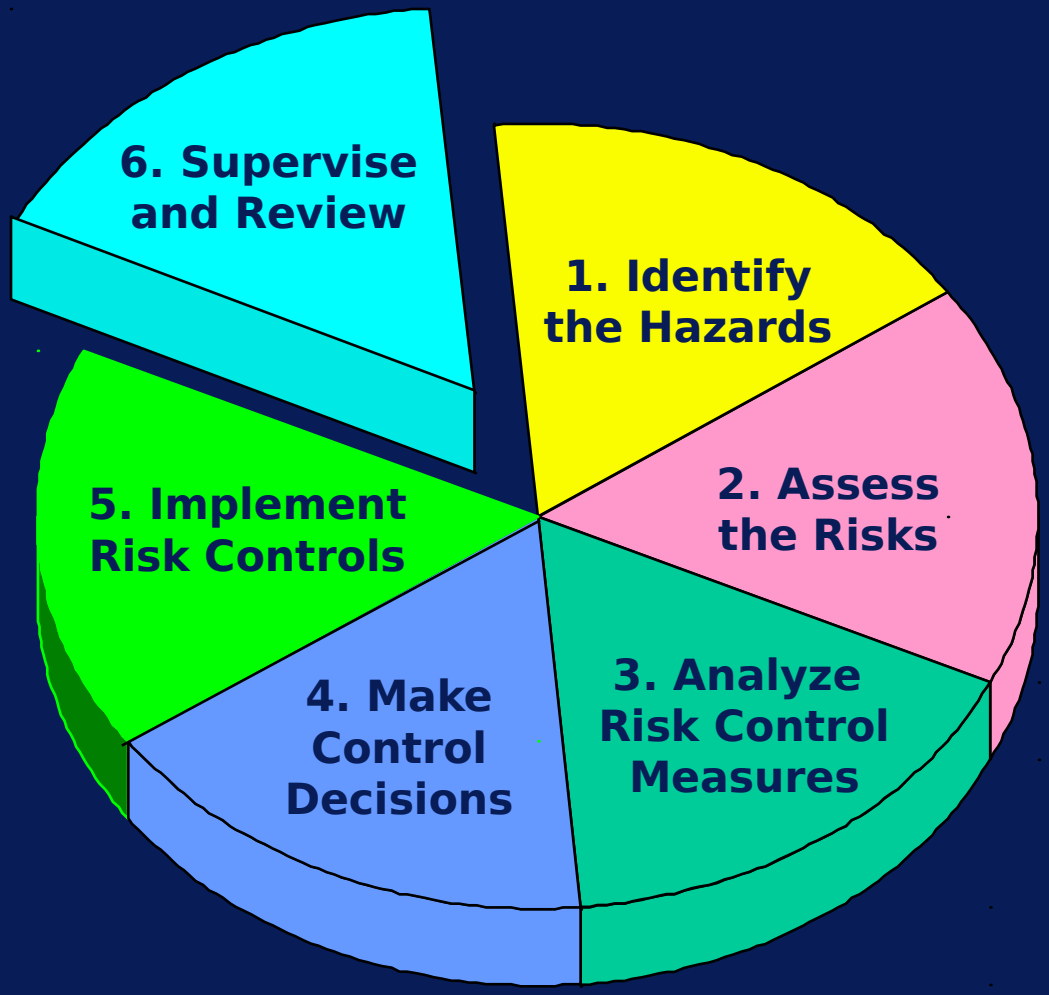
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# Step 6 - Follow-Up



**Step 6 is about LEADERSHIP**

**Measure mission effectiveness and direct indicators of risk.**

**Measure on a real time status.**

**Be proactive, not reactive.**

# Step 6 - Follow-Up



## Supervise

**Assure “fixes” are effective and in place.**

**Maintain implementation schedules.**

**Assure needed changes are detected.**

**Correct ineffective fixes.**

# Step 6 - Follow-Up



## Consider

- Are implementation schedules maintained?
- Are fixes effective and in place?
- Are all cost areas being monitored?
- Are costs within budgeted amounts?
- Are cost trends favorable?
- Are needed changes detected.

# Step 6 - Follow-Up



## Feedback
## Provide feedback during the operation.

**Cross-tell successes and failures to other organizations.**

**Provide feedback to leaders and airmen/employees during the operation.**

**Input lessons learned in established databases.**

# HAZARD IDENTIFICATION TOOLS



## Five of the most frequently used Hazard Identification Tools

- **OPERATIONS ANALYSIS**
- **PRELIMINARY HAZARD ANALYSIS**
- **WHAT IF TOOL**
- **CHANGE ANALYSIS**
- **SCENARIO PROCESS**

# THE OPERATIONS ANALYSIS

UNDERSTANDING THE FLOW OF EVENTS

# OPERATIONS ANALYSIS

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**PURPOSE: To understand the flow of events.**

**APPLICATION: Used in almost all ORM situations.**

**METHOD: List the events in sequence.**

**RESOURCES: Planners & operators.**

**COMMENTS: Operations Analysis must cover all aspects of an operation.**

# OPERATIONS ANALYSIS

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## A VERY USEFUL TOOL TO:

**Make an initial analysis of the risks in an operation.**

**Detect task overload and fatigue issues.**

**Spot interface issues.**

**Guide allocation of resources.**

# PRELIMINARY HAZARD ANALYSIS

A QUICK INITIAL ASSESSMENT OF HAZARDS

# PRELIMINARY HAZARD ANALYSIS



- **PURPOSE: To get a quick hazard survey of all of the phases of an operation.**
- **APPLICATION: Used in almost all applications except the most time critical.**
- **METHOD: Expand on the operation analysis.**
- **RESOURCES: Get input from operators.**
- **COMMENTS: Be sure to consider <u>all</u> aspects of the operation in the PHA.**

# PRELIMINARY HAZARD ANALYSIS



## CHARACTERISTICS

**Quick assessment of hazards**

**Uses scenario thinking, brainstorming, experts, accident data, regulations**

**Considers all phases of operations**

**Provides early ID of highest risk areas**

**Helps prioritize areas for further analysis**

# HAZARD ID TOOL-3

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## THE WHAT IF TOOL

ONE OF THE BEST

# THE WHAT IF TOOL

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**PURPOSE: To capture input of employees in a brainstorming-like environment.**

**APPLICATION: Use in most ORM applications, especially time critical.**

**METHOD: Choose a segment of the operation and generate as many what if's as possible.**

**RESOURCES: Build off the operations analysis and areas of concern spotlighted by the PHA. Use employee input.**

**COMMENTS: Very effective tool.**

# THE WHAT IF TOOL

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## PROCEDURES

**Set boundaries for the review.**

**Brief the team on the process.**

**Brainstorm what-if questions within the boundaries.**

**Record all questions.**

**Break questions out into related groupings.**

**Assign each group of questions to an accountable person.**

# HAZARD ID TOOL-4



## CHANGE ANALYSIS

CRITICAL TOOL IN HAZARD DETECTION

# CHANGE ANALYSIS



**PURPOSE:** To detect the hazard implications of both planned and unplanned change.

**APPLICATION:** When change occurs and there is any meaningful degree of risk.

**METHOD:** Compare the current situation to a previous situation.

**RESOURCES:** Previous or baseline situation.

**COMMENTS:** This is the great labor/time saver. Change analysis means focus only on the changes.

# CHANGE ANALYSIS



## USE & MANAGEMENT

**To assess the risk implications of planned change.**

**To detect the occurrence of unplanned change.**

**To control the character of change in high risk potential operations.**

**Mishap investigation.**

# CHANGE ANALYSIS



## EXAMPLES OF CHANGE ANALYSIS

- **Assess impact of resource cuts (time, dollars, people, etc.).**
- **Assess impact of the environment (cold).**
- **Assess impact of changed equipment or supplies (F-16 for A-10).**
- **Assess impact of change on downstream activities (safer tests).**
- **Assess the impact of process &**

# SCENARIO PROCESS TOOL

A SYSTEMATIC WAY TO CAPTURE INTUITION AND EXPERIENCE

# SCENARIO PROCESS TOOL

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**PURPOSE:** Use imagination to visualize and capture unusual hazards.

**APPLICATION:** "See" the flow of events.

**METHOD:** Visualize the flow of events and identify hazards and problems as they are observed.

**RESOURCES:** The operations analysis provides "script" to visualize the process.

**COMMENTS:** This is the best tool for linking two or more hazards into a single scenario.

# SCENARIOS PROCESS TOOL



## USES FOR SCENARIOS PROCESS

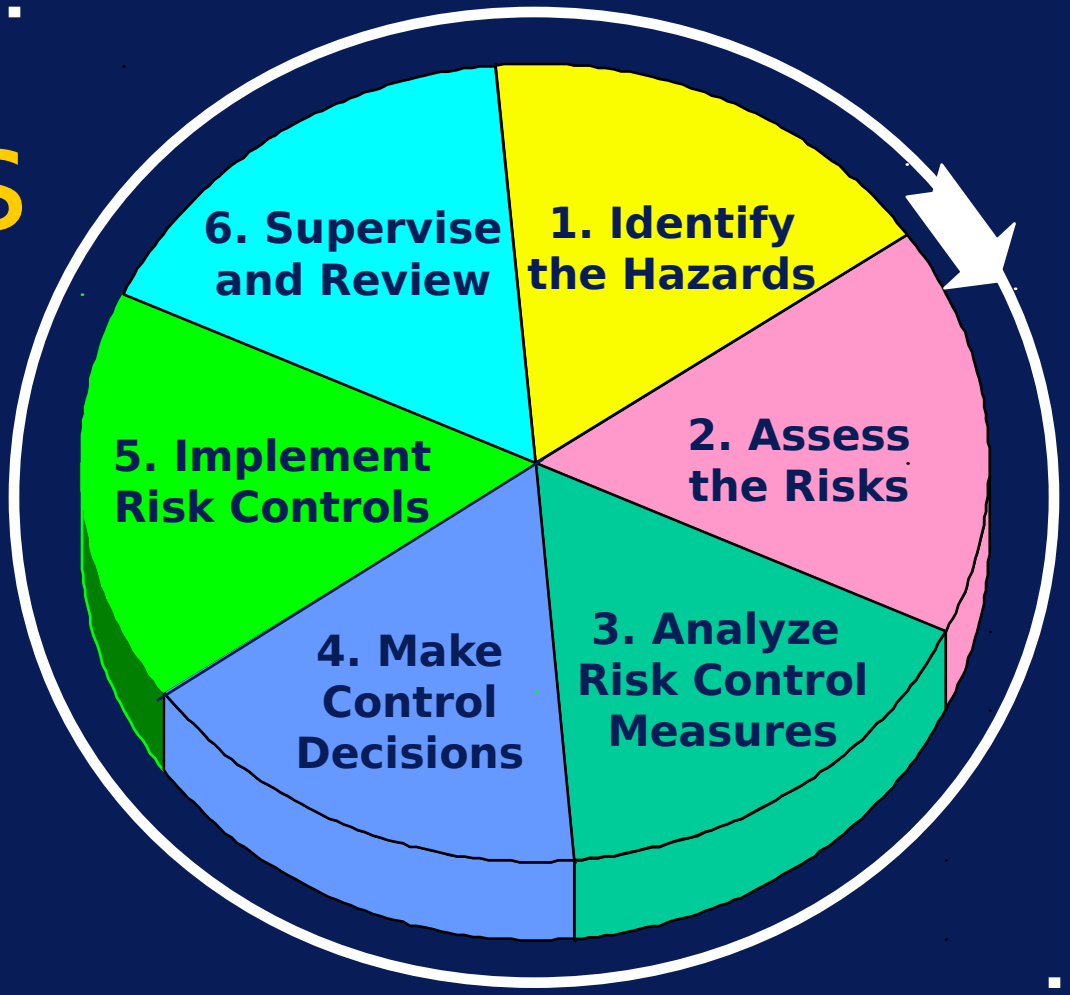
**Hazard detection**

**Coordinate fragmented hazard data**

**Link hazards to possible results**

**Provide excellent training for process or program developers**

# Questions ?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